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Greater Sandhill Crane Module
for the
Timberland Planning Component

California Department of Fish and Game
Northern California – North Coast Region
Interior Timberland Planning Team

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Resource Issue

The greater sandhill crane (GSC) population declined drastically in the Pacific states in the late 1800's and early 1900's (Littlefield and Thompson 1979). Habitat destruction and unlimited hunting were major causes for the decline. Dawson (1923) reported that probably not more than six breeding pairs were left in California and Gabrielson and Jewett (1940) stated that the subspecies was rapidly disappearing from Oregon (Gabrielson and Jewett 1940).

The GSC breeds primarily in the northeastern portion of California and winters in the Sacramento and San Joaquin valleys. They typically construct nests in secluded sites within larger wet meadows, marshlands or occasionally in short grass prairies (Cogswell 1977, cited by Zeiner et al. 1990). However, pairs have been observed during the breeding season within relatively small, isolated wet meadows and marshes. Breeding pairs may use the same nest site repeatedly and may defend the same territory in successive years (Johnsgard 1975, cited by Zeiner et at. 1990).

In Oregon and California, of the 1,223 GSC breeding pairs recorded in 1986 and 1988, 878 (72%) were on private land, and 345 (28%) were on public land (Littlefield et al. 1994). A GSC survey conducted in 2000 showed an increase of 68% from the California statewide survey in 1988; however, numbers at some sites decreased. Results from the 2000 survey showed a GSC pair distribution of 63% on private land and 37% on public land (Ivey and Herziger 2001). Since the majority of GSC locations are on private lands it is imperative that private landowners are involved in the protection and management of this species.

The GSC is protected by the Federal Migratory Bird Treaty Act of 1918 in the United States, by the Migratory Birds Convention Act in Canada, and several state and provincial laws including Fish and Game Code sections 2080 and 3511. Declines in the number of breeding GSCs in portions of their range and breeding habitat losses in both Oregon and California resulted in the population being classified by the U.S. Fish and Wildlife Service, Region 1, as a Sensitive Species in 1982, a California threatened species in 1983, and an Oregon sensitive species in 1989. California also listed the GSC as a Fully Protected Species. The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species.

Timber harvest and other private land management activities that occur during the breeding season can significantly disrupt nesting cranes. They are most sensitive to disturbance during courtship, incubation, and when young are on the nest. Disturbance during the courtship period may cause abandonment of nest territories and activities which flush an adult from the nest during incubation may result in nest abandonment or the death of embryos. Activities which separate young cranes from adults can increase their risk of mortality due to predation or exposure. Potential impacts to cranes from THPs are primarily due to disturbance from hauling on appurtenant roads and operations in adjacent timber stands.

Goal

- Ensure that GSCs and their required habitats are adequately managed and protected within timber company lands
- Restore degraded wet meadow and other wetlands which are or could be used by breeding GSCs

Objectives

- Promote adequate protection and disturbance avoidance measures for GSCs and their habitat while streamlining the timber harvesting plan (THP) review process
- Promote and contribute to the development of programmatic GSC conservation plans by the timber companies
- Develop a Interior Timberland Planning Team (Team) database of information on the response of GSCs to various management operations.

Strategic Plan

Programmatic GSC conservation plans could be developed by timber companies either 1) in direct conjunction with the Team or 2) by landowner staff or consultants

with review, comment, and eventual concurrence by the Team. Because the protection measures included in plans will essentially represent "preconsultations" for GSCs, Team concurrence of the final plan is critical in order to streamline the review process. While the specifics of conservation plans may vary with different landowners due to ownership patterns, silviculture practices, timing of harvest, company resources, and other factors, all plans should include certain components:

- Collaborative effort between timber companies and DFG to determine presence of GSCs and gather information about their habitat requirements and responses to different types of disturbance
- Methods to evaluate effectiveness of current protection and avoidance measures for GSCs
- Flexibility in order to allow innovative measures aimed at adequate protection for GSCs
- Elements of adaptive management to respond to new information and monitoring results
- A summary of the biological information for GSCs and the habitats they are known to occupy
- A specific management prescription for protecting GSCs

Additional components might include:

- An analysis of the known (or estimated) response of GSCs to timber operations.
- Development of GSC training and education programs for company foresters, biologists, and other field staff**.**
- Development of company or joint long-term research and monitoring projects to determine the effects of timber operations on GSCs.

Team staff should continue development of in-house information on GSCs. To accomplish this, the Team should coordinate with private landowners, the U.S. Forest Service, the Bureau of Land Management, and others. Elements critical to Team's database include information about GSC distribution, ecology, and response to timber operations and other management activities. The database program itself should be refined and made more user friendly so that it eventually contains links to information about GSC legal status, habitat, ecology, distribution, impacts from timber operations, management recommendations, references, and photographs. Eventually the database could be posted on the Internet, allowing foresters and others access to current information on GSCs.

Monitoring

Monitoring will be an important component of programmatic GSC conservation plans. When programmatic GSC conservation plans are accepted and implemented, pre-harvest review of THPs for potential impacts to GSC will primarily become an implementation monitoring process. Team staff will review

THPs to ensure that GSC habitats and occurrences are adequately described and evaluated, and that, when appropriate, the proper protection measures are included. Monitoring by the Team will also include active and post-harvest inspections, and might include both implementation monitoring and effectiveness monitoring. Implementation monitoring in the field is essential, as it will determine whether companies are actually implementing on the ground protection measures specified in the THPs. Effectiveness monitoring is likewise important to determine the efficacy of the prescribed protection measures. It would be beneficial for the Team to conduct effectiveness monitoring with timber company staff so that the efficacy of various protection measures can be jointly evaluated and agreed upon.

Adaptive Management

Adaptive management is critical to the success of programmatic approaches to GSC protection. In general, not enough is known about the responses of GSCs to specific timber operations. Because of this, management recommendations initially developed for GSCs may be modified.

Results of effectiveness monitoring should be evaluated and, if necessary, incorporated into revised management recommendations for GSCs. When appropriate and feasible, well-planned experiments which are designed to document the effects of specific operations and the response from GSCs should be jointly-developed. The results of these experiments will provide both DFG and timberland owners with a better understanding of the responses of GSCs, such that future management recommendations will be better informed.

GSC conservation plans should be considered “living documents” and the protection measures for GSCs should be designed with the flexibility of being updated through joint agreements whenever new data becomes available. Additionally, Team review of GSC conservation plans should be scheduled every five years. These regular reviews will permit incorporation of necessary revisions to the entire plan or process, and will ensure that all appropriate updates to the protection measures for GSCs are actually included.

Measures of Success

Success will be measured by the extent to which the following are met:

- Development of programmatic plans/agreements with each timber company
- Implementation of GSC protection measures that are regularly included, when appropriate, with the first submittal of THPs and implemented during timber operations
- Collaborative effort between the Team and timber companies for active and post-harvest monitoring aimed specifically at detecting the implementation and effectiveness of the protection measures

- Establishment of joint experiments to determine the response of GSCs to specific timber operations
- Demonstration of the effectiveness of the developed protection measures in protecting GSCs and their habitats
- Restoration activities on degraded wet meadows and other wetland areas which are or could be used by breeding GSCs

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